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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/811,133	03/26/2004	Ralf Kruckel	ANO 6295 US/0606	2794

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EXAMINER	
CORDRAY, DENNIS R	
ART UNIT	**PAPER NUMBER**
1731	

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	02/23/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary	Application No.	Applicant(s)	
	10/811,133	KRUCKEL, RALF	
	Examiner	Art Unit	
	Dennis Cordray	1731	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) 1-20 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) 1-20 is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date 3/26/04,2/1/07.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Claim Objections

Claims 5 and 9 are objected to because of the following informalities:

In Claim 5, line 7, the word "others" should be changed to "other".

In Claim 9, line 2, the word "of" should be inserted between the words "consisting" and "compounds".

Appropriate correction is required.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-12 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 1 recites "the group consisting of oxyalkylene phosphate and sulfate esters and salts thereof." It is not clear whether the claimed group consists of 1) oxyalkylene phosphate and salts thereof, and sulfate esters and salts thereof; 2) oxyalkylene phosphate esters and salts thereof, and sulfate esters and salts thereof; 3) oxyalkylene phosphate esters and salts thereof, and oxyalkylene sulfate esters and salts thereof; or 4) some other combination.

Claims 2-12 depend from and therefore inherit the indefiniteness of Claim 1.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Frolich et al (6306255) in view of Wendel et al (4051093).

Claims 1 and 4-6: Frolich et al discloses an aqueous dispersion for paper sizing comprising a cellulose-reactive sizing agent, most preferably a ketene dimer, a non-cellulose reactive sizing agent, and a hydrophobically modified dispersing agent that is preferably anionic and contains sulfate, sulfonic, phosphate or phosphonic acid groups (Abs; col 2,lines 49-56; col 3, lines 22-24 and 45-55). The sizing dispersion can be used for surface or internal sizing (col 9, lines 1-4).

Frolich et al does not disclose an emulsifier from the group consisting of oxyalkylene phosphate and sulfate esters and salts thereof.

Wendel et al discloses a paper sizing composition comprising a copolymer emulsion and teaches that conventional anionic emulsifiers include alkyl sulfates, alkyl sulfonates and alkyl phosphates that can be in the form of adducts of ethylene oxide (Abs; col 1, lines 33-34; col 5, lines 12-15).

The art of Frolich et al, Wendel et al and the instant invention is analogous as pertaining to sizing dispersions for paper. It would have been obvious to use the claimed emulsifier in the dispersion of Frolich et al in view of Wendel et al as a conventionally known emulsifier and functionally equivalent option.

Claims 2 and 9: Frolich discloses the presence of a surfactant of the general formula $R_4N^+X^-$, each R is independently H or a hydrocarbon group having from 1 to 30 carbon atoms, and X^- is an anion (col 4, lines 35-50 and 60). The disclosed list of examples of surfactants is almost identical to the list of examples recited in the instant Disclosure on p 5, lines 8-15, thus meets the claimed molecular weight.

Claims 3 and 10: The anionic emulsifier is an anionic stabilizer. Alternatively, Frolich et al teaches that alkyl ketene dimers are usually prepared using a sodium lignosulfate (a lignin sulfonate) (col 1, lines 21-24), thus it would have been obvious to one of ordinary skill in the art to include a typical dispersant used with alkyl ketene dimers.

Claims 7-8: Frolich does not disclose a non-reactive size comprising styrene or alkyl esters of (meth)acrylic acid.

Wendel et al discloses that the copolymer comprises:

(A) from 0.5 to 15 per cent by weight of monomers containing a polymerizable C=C bond and at least one carboxyl and/or sulfonic acid or phosphate or phosphite group,

(B) from 5 to 30 per cent by weight of monomers containing a C=C bond and a tertiary or quaternary amino group, or a nitrogen-containing heterocyclic group,

(C) from 0 to 94.5 per cent by weight of styrene and/or acrylonitrile

(D) from 0 to 94.5 per cent by weight of acrylic or methacrylic acid esters of alkanols of 1 to 8 carbon atoms, and

(E) from 0 to 30 per cent by weight of further olefinically unsaturated monomers. The amount of monomers C and D is at least 25%, preferably at least 70%, and up to 94.5% by weight of the polymer. Wendel et al discloses that preferred (meth)acrylic acid esters are methyl (meth)acrylates, ethyl (meth)acrylates, n-propyl (meth)acrylates, n-butyl (meth)acrylates and isobutyl (meth)acrylates (Abs; col 2,lines 8-49, particularly lines 44-49; col 4, lines 63-65). Thus, in some embodiments, the polymer of Wendel et al comprises 94.5% styrene and alkyl (meth)acrylates, the remainder being other ethylenically unsaturated monomers. Wendel et al recites suitable emulsifiers for use in the sizing emulsion are anionic alkyl sulfates, alkyl sulfonates and alkyl phosphates that can be in the form of adducts of ethylene oxide (col 5, lines 12-15). Note that the instant claim language allows for multiple species of ethylenically unsaturated monomers.

The following is from MPEP 2144.06:

> "It is prima facie obvious to combine two compositions each of which is taught by the prior art to be useful for the same purpose, in order to form a third composition to be used for the very same purpose.... [T]he idea of combining them flows logically from their having been individually taught in the prior art." In re Kerkhoven, 626 F.2d 846, 850, 205 USPQ 1069, 1072 (CCPA 1980) (citations omitted) (Claims to a process of preparing a spray-dried detergent by mixing together two conventional spray-dried detergents were held to be prima facie obvious.).

Frolich et al and Wendel et al disclose sizing dispersions for papers. It would have been obvious to one of ordinary skill in the art to form mixtures of the dispersions

of Frolich et al and Wendel et al to also be used for sizing paper as a functionally equivalent composition and to optimize the mixed composition.

Claims 11-12: Frolich et al discloses a preferred embodiment wherein the dispersion is anionic (col 6, lines 54-59). Examples are given showing better performance when the dispersion is anionic (col 9, line 26 to col 10, line 27, especially col 10, lines 25-27). Example 1 also discloses a pH for the dispersion of 5 (col 9, lines 34-35). Wendel et al discloses that the emulsions are stable at a pH from 2 to 12 (col 5, line 68 to col 6, line 3).

Claims 13-16: Frolich et al and Wendel et al are applied as in Claims 1-10. With regard to Claim 14, Frolich discloses that the dispersant is made hydrophobic by attaching one or more hydrophobic chains having from 4 to 30 carbon atoms (col 3, lines 29-36). Wendel et al discloses alkyl sulfates, alkyl sulfonates and alkyl phosphates that can be in the form of adducts of ethylene oxide without specifying the number of oxyethylene (ethylene oxide) units. However, other ethoxylated surfactants disclosed by Wendel et al comprise chains of 7 to 50 oxyethylene units with a long chain alcohol to form a hydrophobic portion (col 5, lines 8-10). It would thus have been obvious to one of ordinary skill in the art to include a similar range of oxyethylene units in the alkyl sulfate, alkyl sulfonate and alkyl phosphate dispersants.

Claims 17-18: Frolich discloses bring together the components of the dispersion and homogenizing the mixture to obtain an aqueous dispersion (col 7, lines 62-66). Wendel et al discloses that the emulsifiers form a homogeneous mixture in water (col 5, lines 7-9).

Claims 19-20: The processes of forming a paper web and dewatering on a wire to obtain a paper and white water are standard papermaking procedures and would have been obvious to one of ordinary skill in the art. Addition of the sizing dispersion to the stock or to a paper surface is disclosed by Frolich et al (col 9, lines 4-10).

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dennis Cordray whose telephone number is 571-272-8244. The examiner can normally be reached on M - F, 7:30 -4:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Steven Griffin can be reached on 571-272-1189. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

DRC

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